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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,747	12/13/2001	Tadashi Ishiguro	448564/0042	6237

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EXAMINER

DICUS, TAMRA

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/021,747	TADASHI ISHIGURO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tamra L. Dicus	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 1774

### DETAILED ACTION

The prior Office Action rejections are withdrawn due to Applicant's arguments. Cancellation of claim 3 is acknowledged.

#### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 6,124,030 to Suzuki et al.

3. Suzuki teaches a cleaning medium for magnetic recording devices comprising a nonmagnetic substrate between 2 and 10 microns (meeting exact range of Applicants) (col. 18, lines 43-45), a cleaning layer thickness between 0.05 to 1 micron (meeting exact range of Applicants), a lower coating layer between 0.2 to 5 microns (meeting exact range of Applicants), and, a total thickness between 2 –10 microns (meeting exact range of Applicants) (col. 4, lines 22-39). Ferromagnetic inorganic particles (embraces nonmagnetic powder) are contained in the cleaning layer, where the cleaning layer overlies the lower coating layer (col. 10, lines 35-40), and binders (col. 12, lines 24-26). The lower coating layer also comprises ferromagnetic inorganic particle  $\alpha$  iron (col. 4, lines 49-63) and binder (col. 10, lines 27-30). See also col.4, lines 1-6. Fatty acids are contained in the lower or cleaning layer (col. 16, lines 9-35). The cleaning layer is formed with a wet-on-wet coating technique (col. 4, lines 23-30), regarding instant claim 7 and removes dirt from magnetic heads (abstract). The protrusion height of the

Art Unit: 1774

surface cleaning layer is not defined in the same way, however, Suzuki teaches the same surface roughness Ra value between 1.0 – 7.0 nm (col. 4, lines 22-28) which is the same range as Applicant describes on page 65 of the specification. The protrusion height is inherent as it describes how smooth the surface is which is indicated by the Ra value which is within the same range and would be expected to be the same absent any evidence to the contrary.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,124,030 to Suzuki et al. in view of USPN 5,747,157 to Hashimoto et al.

Suzuki essentially teaches the invention above. Suzuki teaches using polyurethane binders with polar groups and the same MR-104 conventionally made binders as Applicants (specification pages 44-45) at col. 13, lines 3-30 and lines 60-68, and col. 14, lines 1-21, teaching the molecular weight of the resin may be varied. Suzuki while teaching the same binders and the same polyol polar groups of –OSO<sub>3</sub>M combined with polyurethane (col. 13, line 11) as per instant claim 4, does not expressly describe a polyurethane resin made like that of instant claim 2 comprising the polyol components from 15 to 40 wt% of a short chain diol and having a molecular weight between 500 and 5000. Suzuki does not express the polar group amounts or molecule groups as instant claim 6 between 3 – 20 OH groups. Hashimoto teaches

Art Unit: 1774

a magnetic recording medium for magnetic recording apparatuses (col. 1, lines 1-15) employing a short and long chain polyurethane as per instant claims 2 and 4-6 at col. 3, lines 1-30.

Hashimoto teaches a it is well known to provide to a magnetic layer a polyurethane resin that is a reaction product obtained by using a polyol and an organic diisocyanate as main starting materials. Hashimoto further explains the polyurethane resin containing as components of a polyol 15 to 40% by weight of a short -chain diol component having a cyclic structure, and 10 to 50% by weight of a long-chain polyether polyol component, and further including a polar group -containing long-chain polyol component having a molecular weight of 500 to 5,000. To improve dispersibility, the urethane resin of Hashimoto contains a polar group. Hashimoto uses a strong polar group selected from the group consisting of  $-\text{SO}_3\text{M}$ ,  $-\text{OSO}_3\text{M}$ ,  $-\text{COOM}$ ,  $-\text{PO}_3\text{M}_2$ ,  $-\text{OPO}_3\text{M}_2$ ,  $-\text{NR}_2$ , and  $\text{R}'\text{COO}^-$  where M is a hydrogen atom, an alkali metal or ammonium, and R and R' each are an alkyl group having 1 to 12 carbon atoms. Hashimoto also teaches it is well known to add 3 to 20  $-\text{OH}$  groups per polyurethane molecule. See col. 3, lines 9-35, and col. 4, lines 40-45. Col. 5, lines 23-26 describe polyurethane having a polar group content from  $1 \times 10^{-5}$  eq/g to  $2 \times 10^{-4}$  eq/g as in claim 4. It would have been obvious to one of ordinary skill in the art to modify the cleaning medium of Suzuki to include the polyurethane resin made as required per instant claims 2 and 4-6 because Hashimoto discovered the binder polyurethane mix exhibited excellent electromagnetic characteristics (col. 4, lines 5-8), improvements in dispersibility and dispersion stability (col. 5, lines 17-29).

***Response to Arguments***

Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection. Hashimoto, an analogous art, is still used in the rejection to address the polyurethane ingredients.

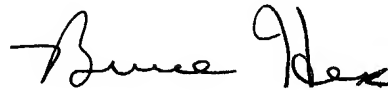
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamra L. Dicus  
Examiner  
Art Unit 1774

August 23, 2004



**B. HAMILTON HESS**  
**PRIMARY EXAMINER**